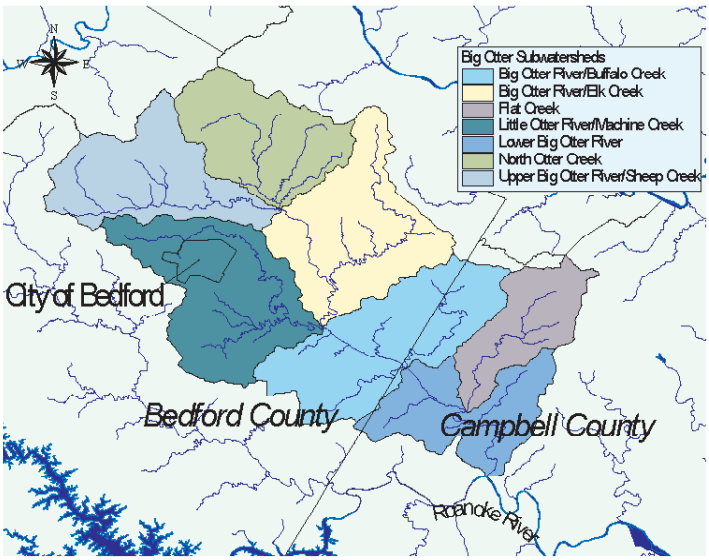
The Big Otter Watershed Clean-Up Plan



Big Otter subwatersheds

The Pollution Sources

Point sources:

Wastewater treatment plants and other industries may discharge bacteria at or below their permitted levels.

Urban and residential development:

Malfunctioning septic systems and straight pipes (directly discharging untreated sewage into the water) contribute bacteria to our streams

Pets:

Dogs and cats contribute fecal coliform to our streams. When pet waste is left in parks and yards, it is carried to streams through runoff.

Agriculture:

Livestock such as cattle and horses contribute fecal coliform through direct deposition of waste into the water, and runoff of manure from the land into the stream.

Wildlife:

Wildlife contribute fecal coliform to our streams through their waste. This is typically a naturally occurring source of bacteria.

The Water Quality Study

A water quality study was completed for Sheep, Elk, and Machine Creeks, and Little Otter and Lower Big Otter Rivers in 2000. This study was conducted after water quality monitoring performed by the Virginia Department of Environmental Quality showed that these streams were violating water quality standards for fecal coliform bacteria. When these standards are violated, people face an increased risk of illness or infection through primary contact with the water including swimming. These streams were added to Virginia's list of "dirty" or impaired waters due to violations of the fecal coliform water quality standard. The study set Total Maximum Daily Loads (TMDLs) for bacteria in each stream that if attained would meet water quality standards. The study also identified the pollutant reductions needed from various sources within each of the subwatersheds (drainage areas) for each impaired stream to meet the goals.

The Clean-Up Plan:
Big Otter TMDL Implementation Plan

After the TMDL study was completed, an implementation or clean-up plan was developed to reduce the amount of pollution from each of the identified pollutant sources. Two additional streams were included in this plan, North Otter and Buffalo Creeks, after water quality monitoring conducted between 1996 and 2002 showed that they were also violating fecal coliform standards. Local citizens and representatives from the following groups and agencies have been involved in developing the Big Otter clean-up plan: The Peaks of Otter and Robert E. Lee Conservation Districts (POCD, RELCD), The City of Bedford, Bedford and Campbell Counties, Natural Resource Conservation Service, Virginia Cooperative Extension Service, Virginia Departments of Health, Conservation and Recreation (DCR), and Environmental Quality (DEQ). All the groups involved worked together to identify best management practices (BMPs), which are conservation measures to improve soil and water quality, to include in the plan. Some examples of BMPs include riparian buffers, rotational grazing, and maintaining septic systems so they remove nutrients and bacteria efficiently. A bi-monthly water quality monitoring program is included in the clean-up plan, which DEQ will use to assess progress in implementing the plan, and to determine whether its goals are achieved. The POCD will work together with the RELCD and local stakeholders to implement the clean-up plan.

DEQ

Peaks of Otter
SOIL & WATER CONSERVATION DISTRICT

DCR

Best Management Practices

The following Best Management Practices (BMPs) were selected for the Clean-Up Plan for the Big Otter watershed by residential and agricultural working groups and a representative steering committee. Implementation goals were established for each of the practices listed below. Financial assistance is available for BMP installation through the Virginia State Cost Share Program. Interested landowners will have the opportunity to discuss their options with qualified staff members, who will help them select BMPs that best suit their needs.

Exclusion fencing and streamside buffer

Agricultural Best Management Practices

Grazing Land and Stream Protection Systems: Establish streamside fencing and buffers to trap pollutants. Stream exclusion systems may also include off stream watering.

Improved Pasture Management: Includes rotational grazing systems, soil testing, nutrient management and improving forage species. Agricultural producers can benefit through reduced feeding costs for livestock and potentially higher stocking rates.

Waste Storage Facilities: Facilities used to store waste from livestock until the appropriate time for fertilization.

Alternative wastewater treatment system installation for a homeowner

Residential Best Management Practices

Septic System Maintenance, Repair and Replacement: Includes the repair or replacement of failing systems, installation of alternative systems where conventional systems are not appropriate, and the replacement of straight pipes with appropriate treatment systems. Homeowners benefit by receiving both technical and financial assistance with septic system maintenance, and potentially extending the life of their septic system by following a proper maintenance schedule.

Benefits to Landowners

- **Improved livestock heard health:** weight gains, reductions in bacterial and viral infections, mastitis and foot rot
- **Improved farm income** through more efficient utilization of forage by grazing animals
- **Improved property values** by way of riparian buffers along streams and properly functioning septic systems
- Improved aquatic habitat and better water quality mean **better recreational resources and overall quality of life**

For more information contact:

Peaks of Otter Soil and Water Conservation District
email: poswcd@centralva.net **phone:** (540)586-9195